

Multi-Session Operations

Working in multi-session mode means starting several parallel Natural sessions. You can control up to 20 active Natural sessions from your terminal. You can work in two parallel sessions displayed on your terminal simultaneously using the split-screen and SWAP features.

You can suspend one session and start another at any time using the SUSPEND and SPLIT session commands.

Typical examples of multi-session operations are copying data from one edit session to another, and editing a Natural program in one session and checking the resulting output in another.

The following figure illustrates a screen with Natural in multi-session mode:

```

----- NATURAL / NATURAL ISPF Main Menu -----
>----- NATURAL VIEW - ENTRY PANEL -----
>>EDIT-PDS:FHI.JCL(ADAREP) ----- Columns 001 072
COMMAND===> SCROLL===> CSR
***** ***** top of data *****
000001 //HKADAREP JOB SAG,CLASS=X,MSGCLASS=X
000002 //JOB LIB DD DSN=RZDBA.DB009.NEWLOAD,DISP=SHR
000003 // DD DSN=RZDBA.DB009.LOAD,DISP=SHR
000004 //REPORT EXEC PGM=ADARUN
000005 //*****
000006 //* DATABASE STATUS REPORT
000007 //*****
000008 //DDASSOR1 DD DSN=DB009.SYSF.ASSOR1,DISP=SHR
000009 //DDDATAR1 DD DSN=DB009.SYSF.DATAR1,DISP=SHR
000010 //SYSUDUMP DD SYSOUT=X
000011 //DDDRUCK DD SYSOUT=3 -> ADAREP MESSAGES
000012 //DDPRINT DD SYSOUT=* -> ADARUN MESSAGES
000013 //DDCARD DD DISP=SHR,DSN=NPRTAD.SYSF.DB009.CONTROL(CADAREP)
000014 //DDKARTE DD * <- ADAREP PARAMETERS
000015 ADAREP NOFDT,FILE=66,67,68,70,74,75,76,77,78,79,84,85,86
000016 /*
***** ***** bottom of data *****
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10---PF11---PF12---
Help Split End Suspe Rfind Rchan Up Down Swap Left Right Curso

```

The screen shows two suspended sessions, one containing the Natural ISPF Main Menu, the other a session with the VIEWS facility; two sessions are displayed in split-screen mode, the top session contains a PDS object editing session, the bottom session contains a list of Natural objects.

Natural provides a special feature here: the SEPARATE session command separates the current screen from its session, thus creating two sessions out of one. This feature is especially useful in conjunction with the SPLIT command. For example, after selecting an object from a list with a line command, you can issue the command sequence

```
SEPARATE;SPLIT
```

to display the object and the original list in separate sessions in split-screen mode.

Example:

If you enter the command SEP;SPLIT 10 in the command line of the following screen, enter the line command E preceding the member INPLISP and press Enter ...

```

S*>>LIST-PDS:FHI.ESM.JCL(*) ----- Row 0 of 41 - Columns 010 076
COMMAND====> sep;split 10                                SCROLL====> CSR
MEMBER          VV.MM  CREATED  MODIFIED TIME  SIZE  INIT  TID  ID
** ***** top of list *****
ADACOP           01.12  19930430 19940929 13:38    170    44    HKA
ADAREP           01.04+ 19941017 19980910 13:36     16    14    FHI
CATDEV           01.26  19911202 19960604 19:16     32    19    HKA
CMPLOAD          01.02  19900830 19931213 10:34      6     6    HKA
DELENV           01.16  19910904 19970227 13:06     23    19    HKA
ERRLODU          01.04  19911202 19970221 17:01     16    19    HKA
FHITST           01.01  19970919 19970919 13:51      1     1    FHI
FNATBACK         01.03  19971124 19971124 15:37     31    31    FHI
IBGVSE           01.30  19950222 19960909 18:30     27    21    HKA
IEBGENPQ         01.15  19950310 19971104 13:36     34    26    FHI
IEBGNIMP         01.04  19950310 19970711 14:14     30    26    MZC
IEBGNOWN         01.04  19970717 19971113 14:10     19    19    FHI
IEBGNPQ2         01.25  19950310 19971104 15:06     63    26    FHI
INPL             01.20  19910418 19970221 16:17     47    17    HKA
e INPLISP        01.12  19971126 19971203 16:24     35   119    FHI
INPLSCAN         01.12+ 19980212 19980603 10:50     16    17    FHI
IUPD             01.01  19970221 19970221 16:37     18    18    HKA
LDDMCT           01.06  19920601 19930125 13:02     23    23    HKA
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10---PF11---PF12---
      Help Split End  Suspe Rfind Rchan Up      Down Swap Left Right Curso

```

... the requested edit session with member INPLISP is displayed in a separate session in split-screen mode, up to Line 10:

```

S*>>>EDIT-PDS:FHI.ESM.JCL(INPLISP) ----- Columns 001 072
COMMAND====>                                SCROLL====> CSR
***** top of data *****
000001 //FHI  JOB FHI,MSGCLASS=X,CLASS=G,REGION=2500K
000002 //INPLISP EXEC PGM=NATBAT22,
000003 //      PARM=( 'DBID=9,FNR=40,FUSER=(,121),FSEC=(,16),IM=D,MT=0,MADIO=0',
000004 //          'INTENS=1,MAXCL=0,AUTO=ON,FDIC=(,122)')
000005 //STEPLIB DD  DSN=OPS.SYSF.PROD.LOAD,DISP=SHR
000006 //*      DD  DSN=OPS.SYSF.V5.ADALOAD,DISP=SHR
000007 //CMPRINT DD  SYSOUT=X
----- NATURAL / NATURAL ISPF Main Menu -----
OPTION  ===>

                                User ID  VMU
                                Time    14:34:09
_ 1    NATURAL    - Development Functions      Terminal DAEETCN8
_ 2    NATURAL    - Development Environment Settings Library  SYSISPHU
_ 3    NATURAL    - Maintenance and Transfer Utilities Node    148
_ 4    NATURAL    - Debugging and Monitoring Utilities
_ 5    NAT/NSPF   - Example Libraries

_ 6    SAG        - SAG      Products
_ 7    SYSTEM     - System Products
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10---PF11---PF12---
      Help Split End  Suspe Rfind Rchan Up      Down Swap Left Right Curso

```

Notes:

If the limit of 20 parallel sessions is reached and the user tries to open another session, the message: **No more sessions available** appears. If this message is received in a situation where fewer than 20 sessions are visible on the Activity Table (see description for the ACTIVITY command on the following page) consider the following:

1. Natural keeps a stack of sessions with 20 entries for each half (upper and lower) of the split screen.
2. For every menu level, one stack entry is created. This means that, if the user opens a session via the menu, the following entries are created:
 - Main Menu
 - Entry Panel
 - Object list
 - EDIT or BROWSE session

Thus, for each 'visible' session, four entries are required, so that the limit is reached with only five 'visible' sessions.

3. The number of stack entries can be reduced by using direct commands.

The following commands are available to control multi-session mode of work:

Command	Explanation
ACTIVITY	Displays list of all your Natural sessions. The current session appears highlighted. You can select another session using the P line command, terminate a session by entering a hyphen (-) in the line command field, or SWAP sessions using the S line command. In the Name column of the list, you can enter a short name for the session for easy identification in a later POP command. Alternatively, you can enter the name of a PF key in the Name field. You can then press this PF key at any time to call the associated session (existing PF key definition is overridden).
POP	<p>Calls the indicated session to display. The popped session appears in the section of your screen in which you entered the POP command. The required session is indicated:</p> <ul style="list-style-type: none"> · by placing the cursor on the session header line, or: · by adding the session name as a command parameter (you can assign short names to sessions using the ACTIVITY command), or: · by adding any string from the session header line as a parameter <p>If an unqualified POP command is issued, a selection window with available sessions is opened.</p>
SEPARATE	Separates the current screen from its session to split the session into two. Useful in conjunction with a subsequent SPLIT command to display two screens from the same original session.
SPLIT	Splits the screen to display two Natural sessions. If only one session is active, a new one is created. The screen is split at the line specified in the command parameters or at cursor position. The new session is started in the lower part of your screen. You can change the size of the screen portions devoted to each session by repeating the SPLIT command with an appropriate line number or the cursor position indicating the required split position.
SUSPEND	Suspends the current session and starts a new one: the suspended session is eliminated from display except the top line.
SWAP	When working in split-screen mode, makes the other session active: the cursor is automatically moved to the other session. When working in full-screen mode, calls another session to display in full-screen mode in wrap-around fashion.
UNZOOM	Reverses the previous ZOOM command.
ZOOM	Enlarges the current session to full screen. If any suspended sessions exist, their top lines are eliminated from display. In split-screen mode, the current session is enlarged to full screen. If you are in split-screen mode and have the top lines of suspended sessions displayed, two ZOOM commands are required (one to remove the header lines, one to enlarge the current session).

Additionally, the Editor provides some line commands that allow you to copy or move lines of data from one edit session to another. You can mark the line or lines you wish to move or copy in one edit session and mark the target line in another edit session.

The available line commands to mark the source lines are:

Command	Explanation
C	Copies this line
CC	Marks the first and last line of a block of data to be copied
M	Moves this line
MM	Marks the first and last line of a block of data to be moved

The available line commands to mark the target area are:

Command	Explanation
A	Inserts data after this line
B	Inserts data before this line